

## Patent Abstracts of Japan

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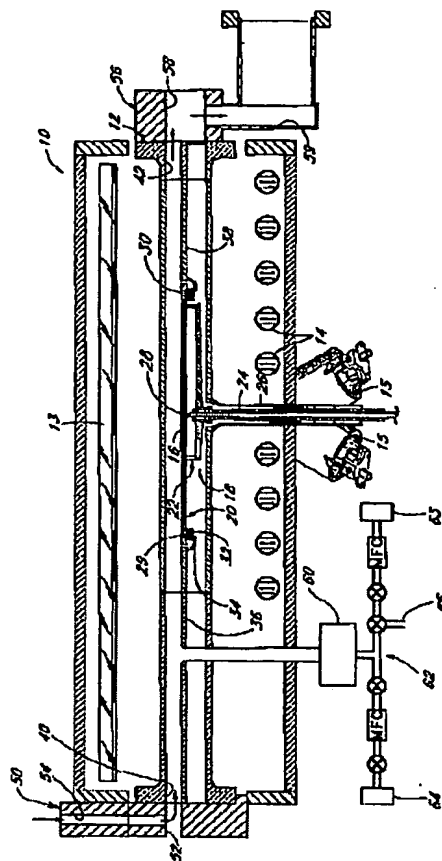
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H01L 29/78 // H01L 27/108 H01L  
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TITLE : MANUFACTURING METHOD AND  
PROCESS OF IN-SITU DIELECTRIC  
STACK



ABSTRACT : PROBLEM TO BE SOLVED: To provide an effective method for forming a dielectric layer with high quality.

SOLUTION: A plurality of sequential processes are carried out in situ-state in a single-wafer processing chamber. The chamber shows a layered gas flow in single pass form for providing safety and clean sequential processing easily. A remote plasma feeding source makes it possible to realize a wide process window and the sequential process at the same temperature. Then, a shifting time for a thermal lamp between the in situ steps can be made short. In an exemplifying processing, extremely thin interface silicon oxide, nitride and/or oxy-nitride material are grown, and then a silicon nitride is stuck in an in-situ state. The cleaning, annealing and electrode attachment are carried out in the in-situ state, so the shifting time can be made short, and the reactive time is not diminished.

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